Multi-Mission Space Exploration Vehicle (MMSEV)

Canceled Technology Project (2011 - 2014)

Project Introduction

Develop a manned vehicle allowing brief sorties to items of interest during multiple types of exploration missions. The vehicle consists of a core cabin that is optimized for observations, has a robotics platform, and quick access EVA through the use of suitports. Core cabin can be utilized with chassis as planetary rover, or in space with RCS sled.

The Multi--Mission Space Exploration Vehicle (MMSEV) consists of a core cabin with suit ports that is optimized for exploration observations, low overhead EVA and Robotics support, low volume habitation, and Solar Particle Event (SPE) radiation protection. The cabin can be configured with modular mobility systems, and modular forward and aft mounted work packages to address multiple mission destinations and applications. This Advanced Exploration Systems (AES) project covers the MMSEV cabin, MMSEV mobility systems (in--space and planetary mobility modules) and Portable Utility Pallet (PUP). The suit port and suit port compatible exploration suits are included in the AES EVA Suit Port and AES EVA Suit projects, respectively. Development and testing of MMSEV--specific ECLSS components, specifically the fusible heat sink, is included in this plan but collaboration with the AES Life Support Systems project will enable bench testing of other components of the MMSEV Environmental Control and Life Support System (ECLSS) that are not unique to the MMSEV. Manipulator work packages will be provided through the Office of the Chief Technologist (OCT) Human Robotic Systems program. These related projects will use the MMSEV as the focusing element and an overall integrated work breakdown structure will be created by the MMSEV project that includes all of the MMSV's systems.

Anticipated Benefits

Allows single baseline MMSEV that can provide an exploration platform for multiple mission applications. Examples of these applications are the exploration of planetary surfaces, near earth asteroids, and in-space points of interest.

Project Image Multi-Mission Space Exploration Vehicle (MMSEV)

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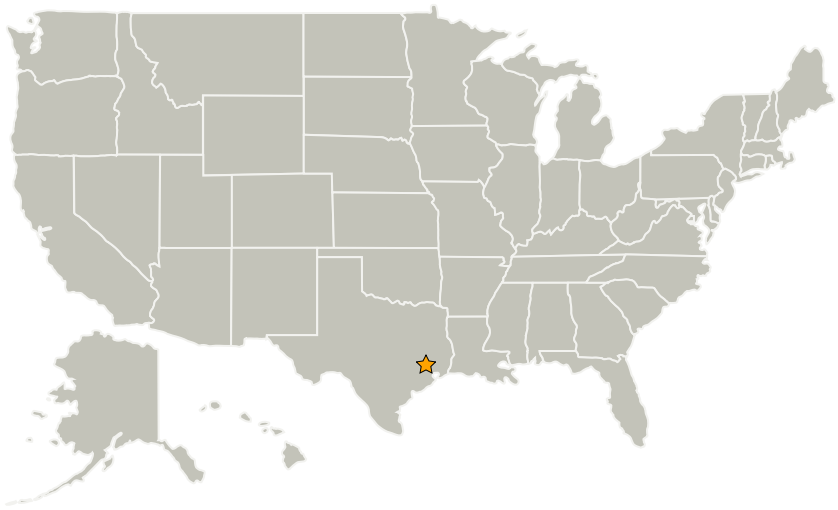
Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Jacobs Engineering Group, Inc.	Supporting Organization	Industry	Dallas, Texas
KBRwyle, Inc.	Supporting Organization	Industry	Houston, Texas
Oceaneering Space Systems	Supporting Organization	Industry	

Project Transitions

October 2011: Project Start

September 2014: Project canceled because no longer relevant to the mission
Rationale: Project canceled because no longer relevant to the mission

Organizational Responsibility

Responsible Mission Directorate:
Exploration Systems Development Mission Directorate (ESDMD)

Lead Center / Facility:
Johnson Space Center (JSC)

Responsible Program:
Exploration Capabilities

Project Management

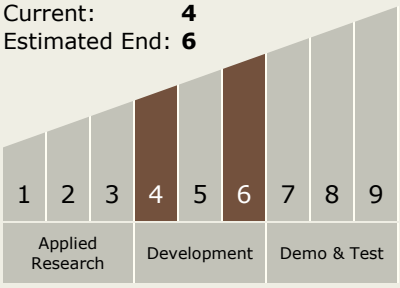
Program Director:
Christopher L Moore

Project Manager:
Michael Gernhardt

Principal Investigator:
Michael Gernhardt

Technology Maturity (TRL)

Start: **4**
Current: **4**
Estimated End: **6**



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September 2014: Closed out

Closeout Summary: To request closeout information for this project, please send an email with the Subject "TechPort Closeout Report Request" to hq-aes@mail.nasa.gov and specify which project closeout report you are requesting.

Images

104.jpg
Project Image Multi-Mission Space Exploration Vehicle (MMSEV)
(https://techport.nasa.gov/image/1187)

Technology Areas

Primary:

- TX13 Ground, Test, and Surface Systems
  - TX13.1 Infrastructure Optimization
    - TX13.1.5 Ground and Surface Logistics